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1. Look at two different points on the orbit. Is the linear speed the same for each point? If your answer is no, under what conditions will the linear speed be the same for each point? If your answer is yes, then what does each point have in common?

2. Estimate the radius of the Orbit. Compute the linear speed of a "car" or seat while the orbit is moving in a vertical circle.

3. Calculate the centripetal acceleration and the force of the seat on a 70 kg person at the top of the vertical circular motion (12 o'clock position).

4. Does the orbit ever move with uniform circular motion? Please explain your answer.

5. Under what conditions would the force due to the seat become zero for the 12 o'clock (top) vertical position? Calculate the speed of the car necessary to cause the force due to the seat to be zero.

6. Draw a force diagram for a rider at the following clock positions: 6,9,12, and 3 o'clock.

7. While the orbit is moving in a horizontal circle, derive a relationship between angle each seat swings out from the vertical and the linear speed.